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## [thru #154 assigned] Coherent vector meson production at an electron ion collider

Exclusive vector meson electroproduction over a broad  $Q^2$  range offers a unique opportunity to probe the gluon structure of nuclei to measure nuclear shadowing, and to search for gluon saturation and/or the colored glass condensate at an Electron-Ion Collider. Understanding the kinematic distributions and cross sections for specific processes can impact detector design to maximize their acceptance and strengthen the physics case. We will discuss predictions from a Monte Carlo generator eSTARlight, a tool developed to study production of exclusive vector meson final states. We present final state distributions and production rates for the  $\rho$ ,  $\phi$ ,  $J/\psi$ ,  $\psi'$  and the  $\Upsilon$  states in  $ep$  and  $eA$  collisions at the different energies.

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